Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Inquiry Regarding Carrier Current Systems, Including Broadband over Power Line Systems	)	ET Docket No. 03-104
	)	
Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems	)	ET Docket No. 04-37

LATE COMMENTS OF ADVANCED POWERLINE TECHNOLOGIES, INC.

Advanced Powerline Technologies, Inc. ("APT") respectfully submits these comments in response to the Federal Communications Commission's ("Commission") *Notice of Inquiry ("NOI")* in the above-referenced proceedings.[1] In these proceedings, the Commission seeks information regarding technical and other issues raised by the implementation of Broadband over Power Line ("BPL") systems. As APT explains below, the Commission should require the proponents of BPL like APT and all those others who would like to provide BPL on a commercial basis to demonstrate that they have addressed and resolved all potential safety and technical issues and concerns before they are permitted to provide the service to "live" customers and that the demonstration be conducted in real world applications in multiple places around the country, and in places conducive of the most harsh

[1] *In the Matter of Inquiry Regarding Carrier Current Systems Including Broadband over Power Line Systems,* ET Docket No. 03-104, *Notice of Inquiry,* FCC 03-100, rel. Apr. 28, 2003, and *In the Matter of Amendment of Part 15 regarding new requirements and measurement guidelines for Access Broadband over Power Line Systems*, ET Docket No. 04-37, *Notice of Inquiry*, FCC 04-29, rel. Feb. 23, 2004.

conditions in the country. It is only in this manner that providers like ourself (APT) can fully demonstrate that they have addressed the issues before us. All parties must have designed their solution to those most stringent standards as it is the only prudent thing for a company to do given the number of citizens around the world this technology will touch. Providers of BPL solutions like ourself (APT) must set the bar for all others that may enter into this new communication medium for the success and prosperity of all. APT will only implement our BPL solution in the most stringent manner such that our BPL technology when deployed into the stream of commerce that it will not, from a technological standpoint interfere with existing services and will prove to be safe, both for customers and service technicians to standards conscientious to the application. With the full understanding that safety and spectrum interference are paramount issues to be addressed at all times.

APT understands that the FCC must also resolve how it will treat BPL providers for regulatory purposes. APT would ask the Commission to consider the impacts of that regulatory regime on the legitimate concerns of other providers of communication services. Specifically, the Commission must take steps that ensure that all BPL providers do not improperly leverage a monopoly over the distribution of electric power to the benefit of their competitive BPL service. APT would suggest that all moneys paid to electric power distribution companies be used in a manner conducive to reducing the cost of electricity to the consumers.

Once the Commission has implemented the high standards put forth by APT that will resolve these regulatory, technical and safety issues, APT and its BPL solution shall provide yet another competitor in the already thriving market for the provision of broadband service. As explained below, the advent of BPL provides yet further reason to treat incumbent local exchange carriers ("ILECs") as "non-dominant" carriers in their provision of broadband services. It also provides further evidence of

the need not to apply the Commission's Computer II/III rules to the transmission component of the ILEC's bundled Digital Subscriber Line ("DSL") services or any other service of that nature.

I.
THE COMMISSION SHOULD REQUIRE ALL POTENTIAL BPL PROVIDERS TO DEMONSTRATE THAT THEY HAVE ADEQUATELY ADDRESSED ALL FORESEEABLE TECHNICAL AND SAFETY ISSUES AND CONCERNS BEFORE GRANTING AUTHORITY TO PROVIDE THAT SERVICE ON A COMMERCIAL BASIS.

As the *NOI* notes, the introduction of BPL services raises potential safety and interference issues. APT knows the precise nature and scope of these issues, and the Commission's decision to gather information is entirely appropriate at this point. Below, APT sets forth its current understanding of those issues, which is necessarily complete. Once the Commission completes its fact gather process, it must place the burden on APT and other prospective BPL providers to demonstrate that the industry has identified and addressed all foreseeable safety and interference issues in a positive manner to the benefit of the linemen and consumers. As APT and other BPL, prospective providers are the ones who stand to reap the financial rewards from BPL, we must ensure that our service will cause no harm to the customers, other providers, or technicians.

APT would like to address the nomenclature in one set of issues that derives from the unfounded notion that all BPL providers need to install "high-pass" filter circuits on utility poles because low-voltage distribution transformers cannot pass a broadband signal. To the contrary, the APT BPL final solution has been tested and proven that APT can pass a broadband signal through distribution transformers with relative ease, with no harmful side effects or harmonics. The APT BPL final solution to BPL deployment will not require the use of filter circuits to strip the broadband signal from power distribution facilities and hand it off to the drop wire serving an individual customer. The APT final solution will avoid disaster, as our solution is designed to ensure that high-voltage current cannot appear on the low-voltage facilities within the premises. And, the size and shape of our devices

is conducive to rapid deployment in a safe and relatively simple fashion. All APT BPL devices can be placed on utility poles without interfering with the facilities of other providers and without endangering any technicians that must work in close proximity to these devices. The Commission must ensure that all BPL devices are designed such as the APT devices so that they can be placed on utility poles without interfering with the facilities of other providers and without endangering their technicians, who will necessarily work in close proximity to these devices.[2]

The Commission must require ALL prospective BPL providers and/or their equipment suppliers to present their devices, along with documentation of test results establishing that they have resolved these concerns as APT has. APT would suggest that all such documentation should be made available for review and comment by all interested parties, including other telecommunications providers. APT welcomes the Commission to undertake its own testing regimen to certify or validate those results at the sole cost of the device owner. APT would welcome any technical and performance standards for these devices that the Commission might well implement.

To the extent that BPL will interconnect with the telephone network,[3] the Commission should require APT and all other prospective BPL providers to demonstrate that this interconnection will not endanger ILEC services, facilities, or technicians. The Commission should also require a complete physical separation of the BPL service from its underlying transmission facilities before handing of the signal to an ILEC, or to the inside telephone wiring at a customer's premises by passing the signal to an ILEC, or to the inside telephone wiring at a customer's premises by passing the signal through the transformers. To do anything less would endanger customers and ILEC technicians, who are not ordinarily trained or certified as

[2] *It may indeed be necessary to revise the standards governing the placement of facilities on utility poles.*
[3] *E.g., to have the ILEC act as a transit carrier between a BPL provider and an Internet service provider, or to*

electricians.

In addition, APT's BPL final solution does not in any manner interfere with the services of other providers, not in their networks and not within the individual premises receiving APT BPL service. By knowing the specific deployment configuration(s) of BPL, APT has properly assessed the scope and magnitude of all concerns. APT is cognizant of the fact, that telephone lines at a customer's premises run close to the electrical wiring and the APT BPL final solution does not give rise to crosstalk or other interference as some have hypothesized.

Again, the Commission should require all potential BPL providers to set forth how they propose to provide the service and furnish technical documentation demonstrating that they have taken all necessary steps to prevent such interferences as APT has. All such documentation should be made available to all interested parties, so they can satisfy themselves and the Commission that their services are adequately protected. APT has proven that our new BPL final solution and device technology has no negative impacts on existing, essential networks. Moreover, because all other potential BPL providers are dealing with the deployment of a new technology with potentially negative impacts on existing, essential networks, APT believes the Commission will need to impose rules governing the design of BPL service as a means of protecting critical infrastructure.

II.
THE COMMISSION SHOULD PROMPTLY CONSIDER THE REGULATORY REGIME TO BE APPLICABLE TO BPL AND THE RAMIFICATIONS OF THAT REGIME.

With APT's BPL final solution and device technology, commercial BPL has become a reality, the Commission should determine how it will regulate that service. As new entrants in the broadband market with our BPL final solution and device technology, APT has acquired the

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provide telephone service via the Internet.

ability needed to compete with other communication mediums currently in use. It is impracticable to surmise that APT or any other BPL provider would have a monopoly in their principal business like the electric utilities monopoly. And the potential for the leveraging of that including the electric utilities monopoly to benefit BPL providers is unrealistic. To the contrary, APT would suggest that all moneys paid to electric power distribution companies be used in a manner conducive to reducing the cost of electricity to the consumers. It is self serving for the large telecoms to contend that BPL service in the highly competitive broadband market segment would be monopolized by any one source. But given the issue, APT will welcome the Commission in any implementation of accounting controls to ensure that BPL service is not improperly subsidized by the electric distribution services of its providers.

Moreover, the regulatory regime that is imposed on BPL should be imposed across the board to all spectrum users. In that manner if one could raise related issues, for example, competitive local exchange carriers ("CLECs") currently have no obligation to make pole attachments available to ILECs. If BPL providers were to be treated as CLECs for regulatory purposes, the Commission would need to ensure that ILECs are not thereby displaced from existing pole-attachment arrangements with electric utilities.

III.
THE ADVENT OF BPL SERVICE PROVIDES FURTHER PROOF OF THE NEED TO GRANT NON-DOMINANT TREATMENT TO THE ILECS' PROVISION OF BROADBAND SERVICES AND NOT TO APPLY THE COMPUTER II/III RULES TO THE TRANSMISSION COMPONENT OF BUNDLED DSL SERVICES.

Under the Commission's existing regulatory regime, only those carriers deemed to be dominant are subject to tariff regulation. To be considered dominant, a carrier must possess individual market power in the relevant product and geographic markets. While APT disputes arguments that it alone possesses market power, it believes the ILECs' status as incumbents

should not carry over to their provision of broadband services.

In prior proceedings[4], others have demonstrated the highly competitive nature of both the mass market and the large-business market for broadband services. In the mass broadband market, the ILECs' DSL services face substantial competition from cable modem, wireless and satellite providers, who serve significantly more broadband customers than the ILECs do. In particular, cable modem service – which the Commission does not regulate – has captured the lion's share of the mass market for broadband services. APT contends that with a fair playing field, BPL will be very competitive.

Without an equitable treatment in all fields, the failure of BPL is imminent and other mediums will vanish into obscurity as well, disparity is even greater in the business market, where large, sophisticated customers procure customized ATM, frame relay and Gigabit Ethernet services from a variety of suppliers, most of whom are not regulated as dominant carriers. Large inter-exchange carriers, such as AT&T and WorldCom, serve the vast majority of frame relay and ATM customers. Because they are regulated as non-dominant, these carriers can tailor their broadband offerings to meet the specific needs of individual large-business customers, while the ILECs are constrained from doing so by the need to file generally-applicable tariffs.[5]

BPL seems likely to secure a niche in at least the broadband mass market and perhaps in the business market as well, thus providing yet another source of competition to the ILECs' DSL services. Its advent provides yet further reason for the Commission to remove the burdens of tariff regulation from all provision of broadband services to promote competition.[6]

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[4] *See, e.g., Comments of Quest Communications International Inc., CC Docket No. 01-337, filed Mar. 1, 2002.*
[5] *The Bell Operating Companies are further disadvantaged in some states by the interLATA restriction imposed by Section 271 of the Communications Act.*
[6] *See, e.g., Comments of Qwest Communications International Inc., CC Docket Nos. 02-33, 9520 and 98-10, filed*

Today, however, the BPL providers have relatively small shares of the broadband market, and their competitors typically do not utilize ILEC transport facilities to provide broadband service.[7]

When APT with its BPL final solution enters the market, it will likewise use its own transport facilities and thus will operate independently from the ILEC network, providing a further bulwark against ILEC market power.

CONCLUSION

APT can satisfactorily address the technical and safety concerns inherent in this BPL service, APT will provide yet another supplier in the already competitive broadband market. APT welcomes the Commission and its regulatory power regarding the safe and nonintrusive deployment of BPL devices and technology, but the Commission must, however, place the burden on those opponents to demonstrate that they have valid scientific evidence that prove our patented BPL solution is harmful. And that those concerns are drafted in a fashion that safeguards the process from an unproven nomenclature. Opponents must prove in fact, with verifiable documentation, and not hypothesize about what may or may not be. APT documentation proves that customers and other service providers will only have spirited competition in the marketplace and that should be welcomed without imposing unreasonable burdens on BPL. For its part, the Commission must determine how to regulate BPL providers, if at all. Given their monopolies over the distribution of electric power is nonexistent, all providers must be subject to appropriate accounting safeguards to prevent the inappropriate cross-subsidization of BPL service as those funds should be used to subsidize energy cost to the

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May 3, 2002 at 21-32.

[7] *In the mass broadband market, some satellite and wireless providers utilize a telephone line to transmit the "upstream" traffic from the subscriber back to the provider. Cable modem service typically operates totally independently of the ILEC network, as do broadband services provided to large businesses.*

consumer.

Finally, as APT has noted, BPL should be deployed with the full understanding that safety and spectrum interference are the paramount issues to be addressed at all times. The broadband market is already highly competitive; the addition of BPL service to the competitive mix will not change anything in that regard, but it does provide further evidence of the need to level the regulatory playing field between all broadband competitors.

Respectfully submitted,

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